

CLAIMS

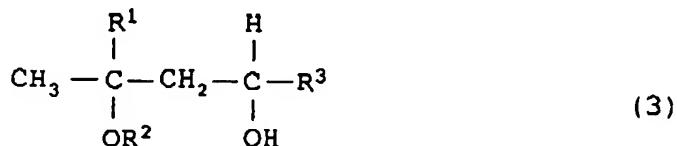
1. An oil-based ink composition for a ballpoint pen, comprising at least a coloring material, a resin and a solvent selected from the group consisting of an
5 alcohol, a polyhydric alcohol and a glycol ether each having a vapor pressure of 0.001 mmHg or more at 25°C as a main solvent which occupies 50% or more of an entire solvent and, further, satisfying at least one of the following (a) to (c):
10 (a) further comprising a phosphoric acid ester neutralized material and polypropylene glycol;
(b) further comprising a chemical substance represented by the following chemical structure (1) or (2):
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$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{R}-\text{N}^+-\text{CH}_2\text{COO}^- \\ | \\ \text{CH}_3 \end{array} \quad (1)$$

wherein R represents an alkyl group having from 10
20 to 30 carbon atoms; or
$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{RCONH}(\text{CH}_2)_3-\text{N}^+-\text{CH}_2\text{COO}^- \\ | \\ \text{CH}_3 \end{array} \quad (2)$$

25 wherein R represents an alkyl group having from 10 to 30 carbon atoms; and
(c) while a solvent selected as the main solvent from the group consisting of an alcohol, a polyhydric alcohol and a glycol ether each having no aromatic ring in a molecular structure occupies 50% by weight or more of an entire solvent, further comprising a phosphoric acid ester neutralized mixture and, still further comprising an additional solvent selected from the group consisting of an alcohol, a polyhydric alcohol and a glycol ether each having an aromatic ring in an amount, based on an entire weight of the ink composition, of from 0.1 to 15% by weight.
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2. The oil-based ink composition for a ballpoint pen, according to Claim 1, wherein the glycol ether is a solvent represented by the following chemical structure (3):

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10 wherein R¹, R² and R³ each independently represent H or CH₃.

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3. The oil-based ink composition for a ballpoint pen, according to Claim 1 or 2, wherein the glycol ether is at least one type selected from the group consisting of: propylene glycol monomethyl ether, 1,3-butanediol, 3-methoxy-1-butanol and 3-methyl-3-methoxy-1-butanol.

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4. The oil-based ink composition for a ballpoint pen, according to any one of Claims 1 to 3, wherein the main solvent is contained in an amount, based on an entire solvent, of 60% by weight or more.

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5. The oil-based ink composition for a ballpoint pen, according to any one of Claims 1 to 4, wherein the main solvent is contained in an amount, based on an entire solvent, of 70% by weight or more.

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6. The oil-based ink composition for a ballpoint pen, according to any one of Claims 1 to 5, wherein the phosphoric acid ester neutralized material is contained in an amount, based on an entire weight of the ink composition, of from 0.01 to 15% by weight.

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7. The oil-based ink composition for a ballpoint pen, according to any one of Claims 1 to 6, wherein the polypropylene glycol has a molecular weight of 1,000 or more and is added in an amount of 0.01% by weight to 10% by weight.

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8. The oil-based ink composition for a ballpoint pen, according to any one of Claims 1 to 7, wherein the coloring material is a pigment, or a pigment and a dye in combination.

9. The oil-based ink composition for a ballpoint pen, according to any one of Claims 1 to 8, wherein an amount of the chemical substance represented by the chemical structure (1) or (2) to be added is, based on 5 the ink composition, from 0.5% by weight to 10% by weight.

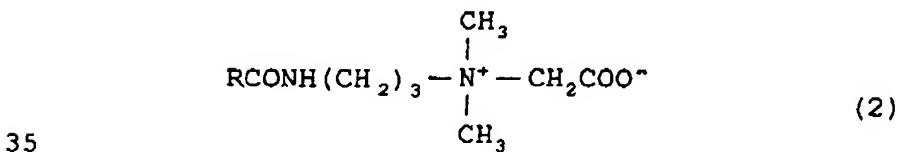
10 10. The oil-based ink composition for a ballpoint pen, according to Claim 9, further comprising a mixture of a phosphoric acid ester and an amine-type compound.

11 11. An oil-based ink composition for a ballpoint pen comprising at least a coloring material, a resin, a phosphoric acid ester neutralized material, and polypropylene glycol, and further comprising a solvent selected from the group consisting of an alcohol, a 15 polyhydric alcohol and a glycol ether each having a vapor pressure of 0.001 mmHg or more at 25°C as a main solvent which occupies 50% or more of an entire solvent.

12 12. An oil-based ink composition for a ballpoint pen comprising at least a coloring material, a resin, and 20 a chemical substance represented by the following chemical structure (1) or (2), and further comprising a solvent selected from the group consisting of an alcohol, a polyhydric alcohol and a glycol ether each having a vapor pressure of 0.001 mmHg or more at 25°C as a main 25 solvent which occupies 50% or more of an entire solvent:



30 wherein R represents an alkyl group having from 10 to 30 carbon atoms; or



35 wherein R represents an alkyl group having from 10 to 30 carbon atoms.

13. An oil-based ink composition for a ballpoint pen comprising at least a solvent selected from the group consisting of an alcohol, a polyhydric alcohol and a glycol ether each having a vapor pressure of 0.001 mmHg
5 or more at 25°C and having no aromatic ring in a molecular structure as a main solvent which occupies 50% or more of an entire solvent and, further, a coloring material, a resin, a phosphoric acid ester neutralized mixture and, still further, an additional solvent selected from the
10 group consisting of an alcohol, a polyhydric alcohol and a glycol ether each having an aromatic ring in an amount, based on an entire weight of the ink composition, of from 0.1 to 15% by weight.

14. An oil-based ballpoint pen, containing an oil-based ink composition according to any one of Claims 1 to 15 in a refill.

15. The oil-based ballpoint pen according to Claim 14, further containing an ink follower in a rear of the ink in the refill.